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March 15, 2017

Mr. John Nordine
U.S. EPA Region 5
RCRA Enforcement and Compliance Assurance Branch (LU-9J)
77 West Jackson Boulevard
Chicago, Illinois 60604

Re: Central Wire, Union, Illinois RCRA CMI Monthly Progress Report, November 2016,
revision 3

Dear Mr. Nordine:

Enclosed please find the revised RCRA CMI Monthly Progress Report for the Central Wire facility located in Union, Illinois for November 2016.

This report includes the eDMR for the groundwater pump and treat facility and the laboratory analytical report, which includes the effluent data used in the eDMR for November 2016.

If you have any comments or questions regarding the progress of this project, please contact me at (262) 237-1130.

Sincerely,

Autumnwood ESH Consultants, LLC

A handwritten signature in cursive script that reads "John W. Thorsen".

John W. Thorsen, P.E.

JWT:jt

encl

cc:	Joyce Munie	IEPA
	Robert Kay	USGS
	Gerald W. Ruopp	Central Wire
	Robert Johnson	Central Wire

MONTHLY PROGRESS REPORT
Central Wire Union, Illinois Site
November 2016, Revision 3

1. **Progress Made This Reporting Period** – This reporting period Central Wire continued the operation and maintenance of the groundwater extraction and treatment system. Central Wire treated an average of 619,000 gallons per day (gpd) with a maximum daily flow of 625,000 gpd. The monthly NPDES sample met effluent limitations for pH, 1,1,1-Trichloroethane (TCA), Trichloroethene (TCE) and Tetrachloroethene (PCE). The electronic Discharge Monitoring Report (eDMR) for the month is attached to this report.

The laboratory analytical report for the pump and treat effluent noted that the groundwater pump & treat effluent samples were collected on November 8, 2016 and arrived at Test America Laboratory on November 9, 2016 at 1.70° C.

Extraction Well No. 2 (EW-2) is functioning, just not at the capacities that it attained immediately after the well rehabilitation in May 2015.

The average flow in the system in 2015 was 613,600 gpd and the average in 2016 was 616,500 gpd. See Table 1 attached.

There is one combined flow meter for both extraction wells. Mr. Johnson turned off extraction well 2 (EW-2) and measured the flow in extraction well 1 (EW-1) and then turned off EW-1 and measured the flow in EW-2 when collecting the influent samples in December 2016. He noted that EW-1 was pumping approximately twice the volume of EW-2. Central Wire averaged a total flow of 619,000 gpd in November 2016, so EW1 was pumping about 400,000 gpd (280 gallons per minute or gpm) and EW-2 was pumping about 200,000 gpd (140 gpm). Central Wire is pumping all the water that is currently being produced in EW-2. If the pumping rate is increased, air begins to be introduced which results in increased wear and tear on the pump and iron deposition on the pipes by oxidizing the iron that is naturally occurring in the groundwater.

As the flow in EW-2 falls off due to screen clogging, the size of the capture zone is reduced. Central Wire does not have the data to calculate the size of capture zone, so we are using distance-drawdown calculations using the November 2016 flow rates and Figure 4-1 from the draft "2016 RCRA Corrective Measures Implementation Field Investigation Report" and the Utah Division of Water Rights Web application to estimate the capture zone.

Central Wire utilized the distances from the extraction wells to the approximated edge of the plume depicted in Figure 4-1 and the Theis Equation distance-drawdown web application to approximate the capture zone of the extraction wells on the plume since

Central Wire does not have all the data to calculate the capture zone (see http://www.waterrights.utah.gov/wellinfo/theis/theis_input.asp).

The printouts are included in Attachment 1.

Table 2
Results of Distance Drawdown Calculations

Measurement Points	Distance Between Points (Feet)	Drawdown at 1 Year (Feet)	Drawdown at 15 Years (Feet)
EW-1 to N Edge	185	1.39	1.85
EW-2 to N Edge	685	0.47	0.69
Total N Edge Drawdown		1.86	2.54
EW-1 – SW Edge	874	0.85	1.31
EW-2 to SW Edge	260	0.63	0.86
Total Drawdown to SW Edge		1.48	2.17
EW-1 to Midpoint	300	1.21	1.66
EW-2 to Midpoint	300	0.61	0.83
Total Drawdown at Midpoint between the two extraction wells		1.82	2.49

This table shows the drawdown on the north edge of the plume from both extraction wells is at about 1.9 ft. after one year and about 2.5 ft. after 15 years of pumping. The impact on the southwest edge of the plume from both extraction wells is estimated at about 1.5 ft. after one year and about 2.2 ft. after 15 years of pumping. Likewise, the impact between the wells is about 1.8 ft. after one year and about 2.5 ft. after 15 years of pumping.

The potentiometric surface depicted in Figure 4-1 was drawn between 2010 and 2012 and was extrapolated between MW-HBR and DGW-2S since there are no known points of calculating the actual depth to groundwater between those two points.

Over the month Central Wire personnel read the hour meter on the well pump motors for the **Ex. 6 Personal Privacy (PP)**

Table 3 provides the results of this which are used in Table 4 (on page 4).

Table 3
Summary of 2016 Irrigation Pumping Hours per Week at Ex. 6 Personal Privacy (PP)
November 2 through November 21, 2016

Date of Hour Meter Reading (1)	Ex. 6 Personal Privacy (PP)				Hours of Irrigation Well Pumping/Week
	Hour Meter Reading	Hours Pumped	Hour Meter Reading	Hours Pumped	
10/24/2016	6530	0	4155	0	0
11/2/2016	6534	4	4156	1	5
11/7/2016	6534	0	4156	0	0
11/14/2016	6546	12	4163	7	19
11/21/2016	6549	3	4169	6	9
Totals		19		14	33

(1) Note: Pumps were put into storage after November 21.

On December 12, 2016, Central Wire personnel downloaded the data logger tracking the depth of the water in monitoring well DGW-2I in the field for the November data to a laptop computer and reinserted the same data logger into the well.

The groundwater level monitoring data from downgradient monitoring well DGW-2I for November 2016 and the November 2016 precipitation and irrigation well pumping over the month have been graphed / plotted and are attached to this report as Table 4. Please note that there were three pressure anomalies at lines 3450 – 3452 on December 8 which impacted the groundwater elevations. Central Wire does not know the cause of this anomaly.

The depth to water measured from the top of the well casing was 7.09 feet in DGW-2I on November 2, 2016 at the beginning of the month. Therefore, there nominally was 23.25 feet of water above the data logger (30.34 ft. [depth of data logger] – 7.09 ft. [water level below top of casing]). The last data logger reading on November 2 from Table 3 of the October 2016 Monthly Progress Report at 1100 hours indicated there were 23.23 feet of water above the data logger (see entry 2876 on Table 2 of the October Monthly Progress Report). There was a difference of 0.02 feet between the manual measurement and the data logger measurement or a difference of 0.086%.

The depth to water measured from the top of the well casing was 6.90 feet in DGW-2I on December 12, 2016. Therefore, there nominally was 23.44 feet of water above the data logger (30.34 ft. [depth of data logger] – 6.90 ft. [water level below top of casing]). The last data logger reading on December 12 at 1246 hours (line 3888 on Table 4 attached) indicated there were 23.44 feet of water above the data logger, the same as the manual reading.

The first logger reading on November 2 was 23.283 feet and the last logger reading on December 12 was 23.44 feet for a difference from start to end of the period of + 0.157 feet.

The groundwater elevation during this period reached its highest level on November 4 at 815.015 feet above mean sea level. The groundwater elevation reached its low on November 28 at 813.223 feet above mean sea level for a total variation over the month of 1.792 feet.

Central Wire was aware the **Ex. 6 Personal Privacy (PP)** well would be turned off soon so Central Wire collected a sample on November 8. It arrived at the lab on November 9 at 1.7° C. There were no VOCs detected in this sample. The results are reported in the Central Wire 11-2016 NPDES Analytical Report.pdf which is attached to this report.

2 Summary of Validated Data and Results

Pump & Treat System NPDES Sampling

The monthly effluent sampling took place on November 8, 2016. The permit limitations and analytical results are shown in Table 5, below. There were no effluent limitation exceedances.

Table 5
Central Wire Union Illinois Pump & Treat Discharge Analytical Results

Parameter	Effluent Limitation (Daily Maximum) µg/L	Analytical Results, µg/L
1,1,1-Trichloroethane	20	< 0.38
Tetrachloroethene	20	< 0.37
Trichloroethene	20	<0.16

The November NPDES analytical report, including the November **Ex. 6 Personal Privacy (PP)** analysis, is attached to this Monthly Progress Report.

This report also has environmental analytical results for the North Pond and South Pond. These ponds are Illinois EPA-regulated seepage ponds for Central Wire's rinse waters from the annealing process, non-contact cooling water, boiler blowdown and storm water.

3 Upcoming Events/Activities Planned – Central Wire will continue to operate the existing remediation systems. Effluent samples will be collected, analyzed and reported as required in our NPDES permit.

RCRA monitoring wells and selected residential wells will be collected on a six month cycle, usually in June and December.

Samples will continue to be collected at the **Ex. 6 Personal Privacy (PP)** well every month when the **Ex. 6 Personal Privacy (PP)** well operating, usually between April and October of each year. This is being done at the request of U.S. EPA.

Mr. Tures of South Branch Nursery clarified their pumping routine on March 6, 2017 by telephone provided the following information:

- There is pumping 24/5, except in July, August and September when they generally pump 24/7 at 120 to 140 gpm. The night pumping is drip irrigation of the trees.
- Pumping does not occur from October or November through April.

A distance-drawdown calculation was done between DGW-2 and the **Ex. 6 Personal Privacy (PP)** well at EPA's request. However, this calculation assumes the pump is operating full time and we know that there is a 6 – 7 month time period when the pumps don't run over the winter and the pumps are turned off during the growing season when there has been adequate precipitation. Therefore, the six and seven month drawdowns at DGW-2A are 0.30 and 0.31 feet which is less than 4 inches. A copy of the web application printout is attached as Attachment 2.

Central Wire is discussing the mechanics of managing the water generated in surge blocking Extraction Well No. 2 by Municipal Well & Pump and has a cost estimate from them. Central Wire is working with Heritage Environmental Services to determine the proper tankage volumes and arrangements to obtain their cost estimate. Central Wire will determine when the trucks and tanks can get to the well because of an overly wet November. We may have to wait for the ground to freeze.

At EPA's request, Central Wire is preparing an integrated report of the RCRA CMI Field Investigation which required three different sampling events and includes the June extraction well sampling along with the June semiannual RCRA and Residential Well Sampling Event. A draft report will be provided to EPA by December 15, 2016.

4 Anticipated Problem Areas and Recommended Solutions – None.

5 Key Personnel Changes – None.

6 Target and Actual Completion Dates – This project has not deviated from the project schedule.